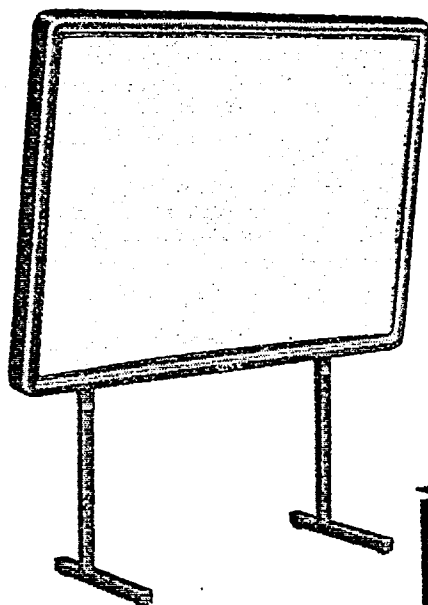


B

SONY

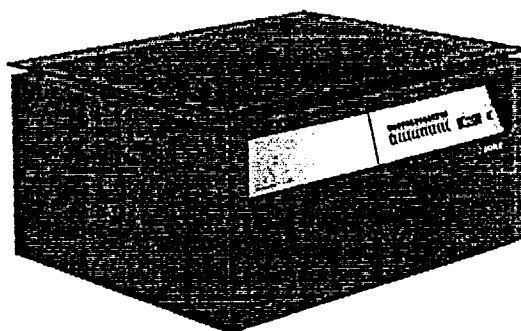
COLOR VIDEO PROJECTION SYSTEM

KP-5020/7220



OPERATING INSTRUCTIONS

Before operating the set, please read this manual thoroughly, and retain it for future reference.



OWNER'S RECORD

The model and serial numbers are located at the rear of the projector. Record these numbers in the spaces provided below. Refer to them whenever you call upon your Sony dealer regarding this product.

Model No. _____ Serial No. _____

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WARNING

To prevent fire or shock hazard, do not expose the set to rain or moisture.

Dangerously high voltages are present inside the projector. Do not open the cabinet. Refer servicing to qualified personnel only.

CAUTION

To ensure top performance, keep the following in mind during installation and use.

Location

Do not install the projection system in a location near heat sources such as radiators or airducts, or in a place subject to direct sunlight, excessive dust or humidity.

Illumination

The screen should not be exposed to illumination directly from the front. Windows that face the screen should be covered by opaque drapery while the set is being viewed. It is desirable to install the projector system in a room whose walls and floor are of nonreflecting material.

As a general rule, darken the room to the point where there is just sufficient light to read or write comfortably. Spot lighting is desirable for illuminating small areas so that interference with the screen is minimized.

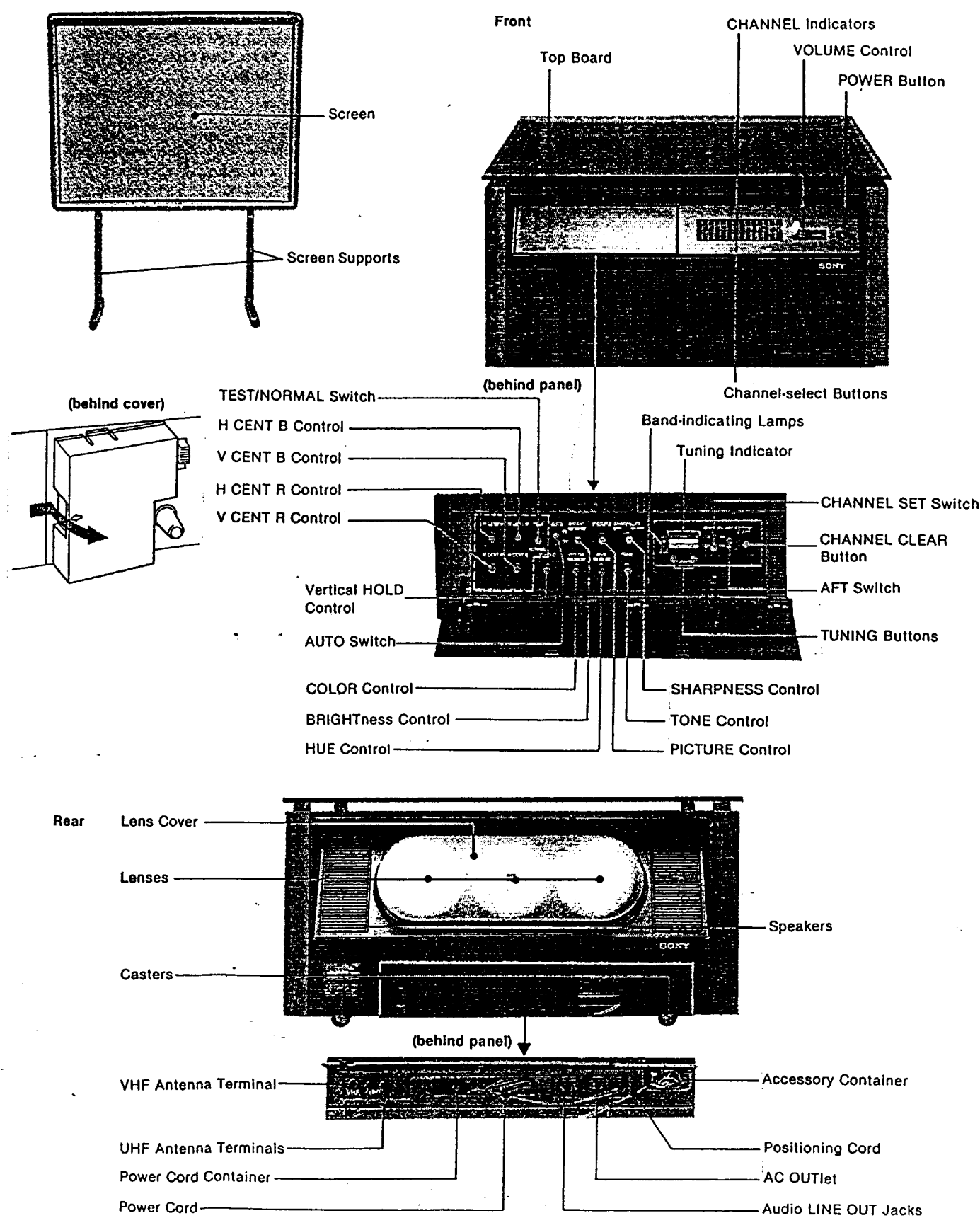
General

- Operate only on 120V ac.
- This projector is equipped with a polarized AC power cord plug (one blade of the plug is wider than the other), which will fit into the power outlet only one way. Should you be unable to insert the plug fully into the outlet, try reversing the plug. Should the plug still fail to fit, contact your dealer for assistance. Do not defeat the safety purpose of the polarized plug.
- Allow adequate air circulation to prevent internal heat built-up. Avoid placing the projector on soft surfaces (rugs, blankets, etc.) or inserting magazines, papers, or cloth into the space between the top board and the projector that may block the ventilation holes.
- Should any liquid or solid object fall into the cabinet, unplug the system and have it checked by qualified personnel before operating it any further.
- Unplug the set from the wall outlet if it is not to be used for an extended period of time.
- To disconnect the cord, pull it out by the plug. Never pull the cord itself.
- Avoid touching the reflecting surface of the screen or the lens. To remove dust on the screen surface or lens, use a dry, soft cloth. Do not use a wet cloth, solvents, or thinner for cleaning purposes.
- To keep the cabinet looking brand-new, periodically clean it with a soft cloth. Stubborn stains may be removed with a cloth lightly dampened with a mild detergent solution. Never use strong solvents, such as thinner or benzine, or abrasive cleansers, since these will damage the cabinet.
- Save the original shipping carton and packing material; they will come in handy if you ever have to ship your set. For maximum protection, repack your set as it was originally packed at the factory.

FEATURES

- The Sony Color Video Projection System, a product of Sony Trinitron color TV technology, projects TV pictures on a large screen: 50-inch (KP-5020) or 72-inch (KP-7220) measured diagonally.
- The projector is designed to be used as a center table so as to permit projector operation directly from your seat.
- The semi-automatic program search system permits easy preset tuning of up to 14 channels; VHF, UHF or inactive channels (for monitoring the playback of a video tape recorder, etc.).
- Advanced new automatic circuits are built into the tuner unit to eliminate the necessity for frequent readjustment of the tuning and color controls: A touch of the AFT Switch instantly activates these circuits to tune your set for peak performance. A touch of the AUTO Switch locks the color processing system to factory preset values that assure realistic reproduction of every shade and tint.
- Your Sony Color Video Projection System features the ECONO-QUICK system* which provides a picture only a few seconds after the set is switched on. There is absolutely no power consumption for this feature when the set is not in use.
- *This system represents the latest development of the Trinitron TV technology.
- Built-in test pattern permits easy registration adjustment.
- Plastic lenses provide a brighter picture on the screen.

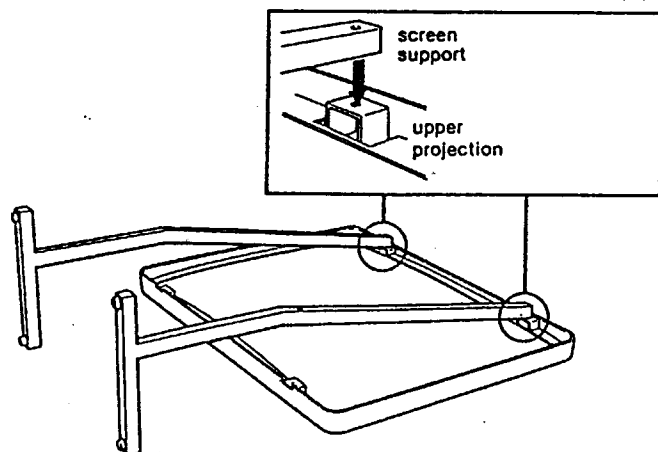
LOCATION OF PARTS AND CONTROLS



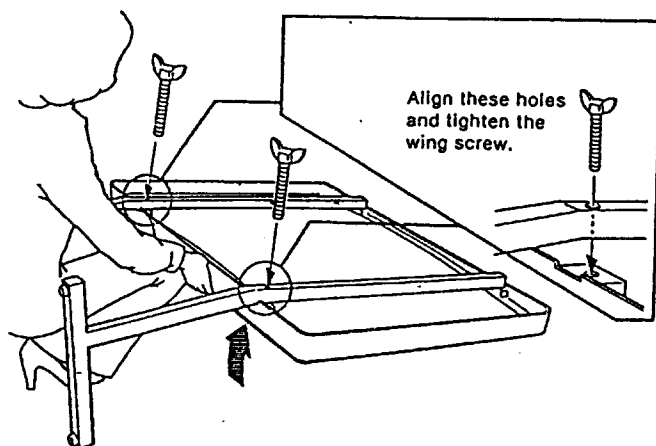
PREPARATIONS

SCREEN INSTALLATION

① Place the screen on the floor with the screen surface downward. Put the upper end of the screen supports right on the upper projections on the rear of the screen.



② Lift up the lower portion of the screen so that the lower projections contact the screen supports, and secure with the two supplied wing screws.



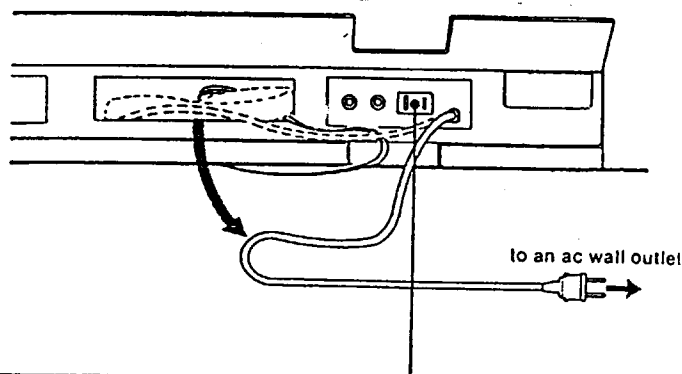
③ Attach the screen supports to the upper projections with the two supplied wing screws in the same manner as for the lower projections.

④ Raise the assembled screen and stand it on its feet.



POWER CONNECTION

The KP-5020 and KP-7220 operate on 120V ac, 60 Hz. Take the Power Cord out of the Power Cord Container at the rear and connect it to a 120V ac wall outlet.

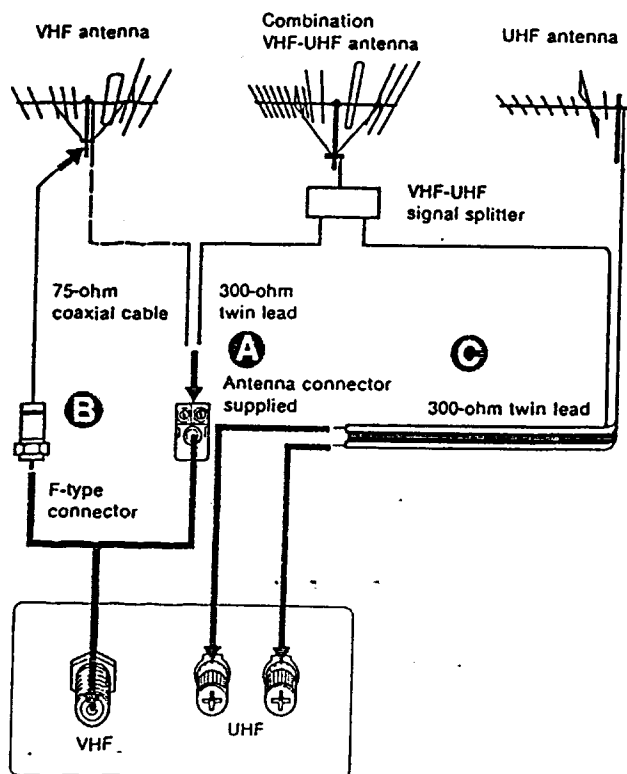


The AC OUTlet provides a convenient ac power source for other video or audio equipment. This outlet is not controlled by the POWER Button on the front.

Caution: Do not connect any electrical home appliance here such as an electric iron or fan whose power consumption exceeds 300 watts.

ANTENNA CONNECTION

If your local signal is of adequate strength, an indoor antenna may be sufficient to obtain a clear picture. The use of an external antenna is recommended especially in difficult reception areas (inside steel-frame buildings, in mountainous areas, or at great distances from the transmitter). VHF and UHF antennas with separate lead-in wires, or a combination VHF-UHF antenna with a single lead-in wire may be used. When a combination VHF-UHF antenna is in use, the signals, separated by a VHF-UHF signal splitter, are fed to the VHF and UHF terminals of the projector respectively.



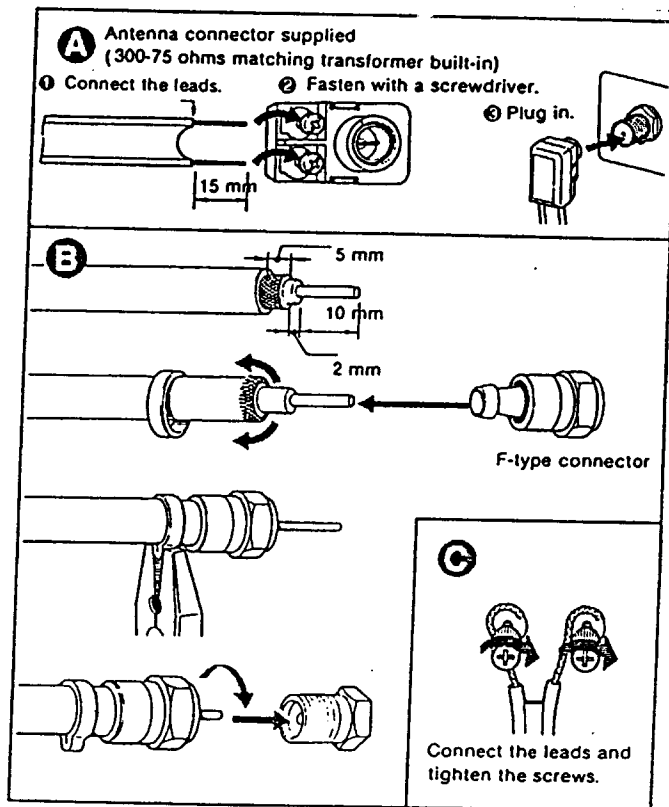
Connection to the VHF Antenna Terminal

When using a 300-ohm ribbon-type lead-in, connect the leads to the Antenna Connector (supplied), then connect the Antenna Connector to the VHF Antenna Terminal. — A

When using a 75-ohm coaxial cable lead-in from the antenna, connect it to the VHF Antenna Terminal with an F-type connector (optional). — B

Connection to the UHF Antenna Terminals

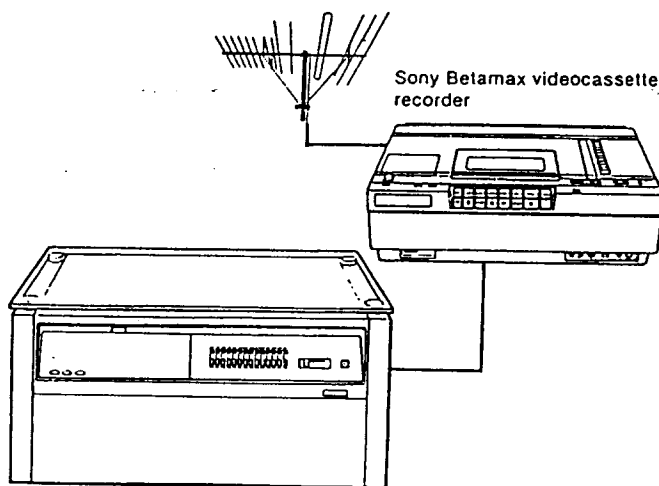
Connect a 300-ohm ribbon-type lead-in wire to the UHF Antenna Terminals. — C



Note:

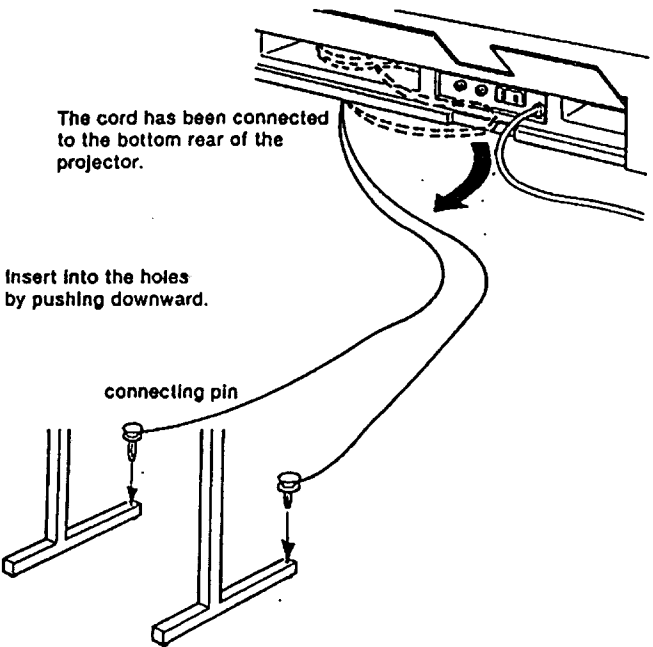
To view the playback picture from a Sony Betamax videocassette recorder (or other VTR) equipped with an RF output terminal, connect a suitable antenna to the recorder (not to the projector) and then connect the VHF (or RF) OUT terminal of the recorder to the VHF Antenna Terminal of the projector.

For details, refer to the operating instructions furnished with the recorder.

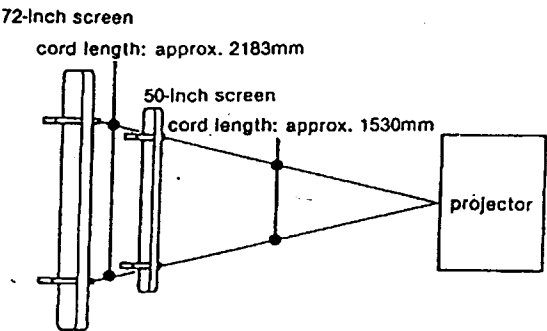
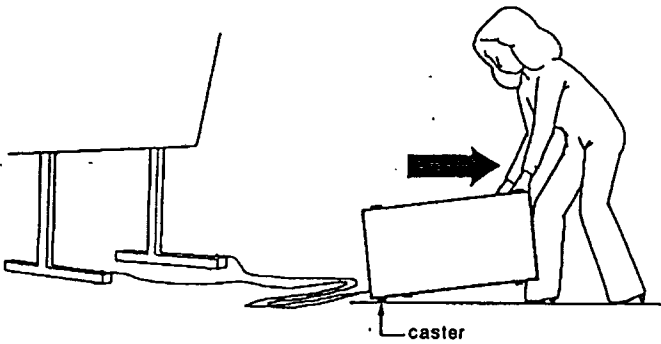


SETTING UP THE SYSTEM

① Take the Positioning Cord out of the Power Cord Container and connect both ends of the cord to the screen support feet.



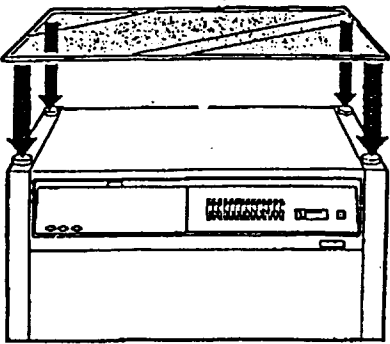
② Move the projector until both sides of the cord are equally tensioned. When moving the projector, lift up the front side and roll it on the casters.



③ Pull out the connecting pins to remove the Positioning Cord from the screen support feet. Store the Positioning Cord in the Accessory Container or the Power Cord Container.

④ Put the Top Board (made of tempered glass) on the projector. The projector may thus be used as a center table. Although the tempered glass is more shock-resistant than ordinary glass, it may shatter if it receives a sudden shock.

- Be careful not to hit the edge of the glass with any object.
- Do not drop anything on the glass.
- Be careful not to scratch the glass.

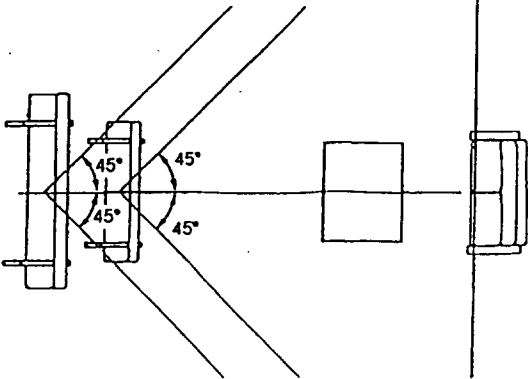
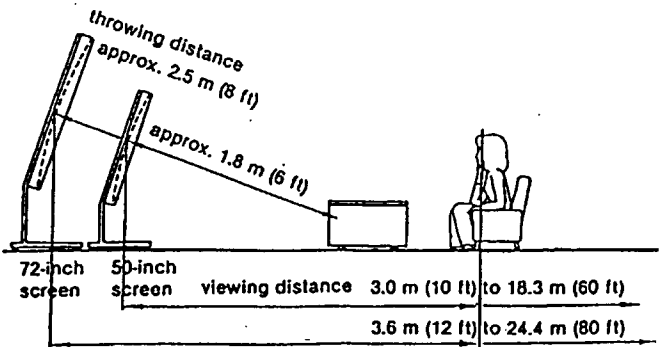


⑤ Remove the Lens Cover.

Note:

- The projector and the screen should be located on the same horizontal level. Avoid setting them on a slanting floor. When placing the projector or the screen on an uneven floor, turn counterclockwise the rubber feet on the bottom front of the projector or on the bottom of the screen supports until the set is level.
- The projector and the screen should be installed perpendicular to each other. (This can be checked in the following registration adjustments.)

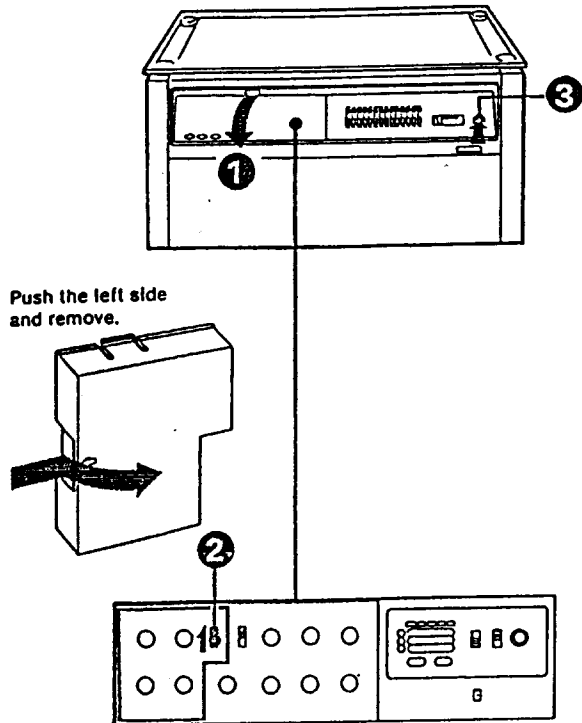
Audience area



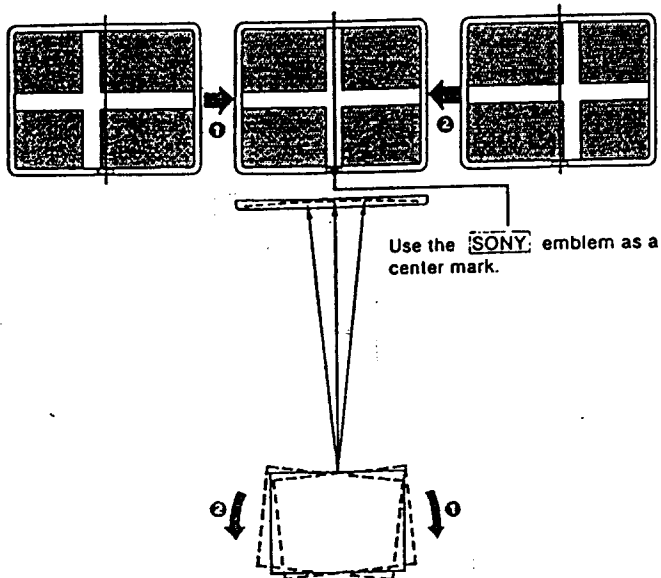
REGISTRATION ADJUSTMENT

Preparation

- ① Open the front panel and remove the cover to expose the controls.



- ② Set the TEST/NORMAL Switch to TEST.
- ③ Press the POWER Button to switch on the projector. A built-in test pattern will be displayed on the screen.
- ④ Check that the white vertical line is displayed at the horizontal center of the screen. If it is not, move the right or left side of the projector slightly to center the line (to install the projector perpendicular to the screen).



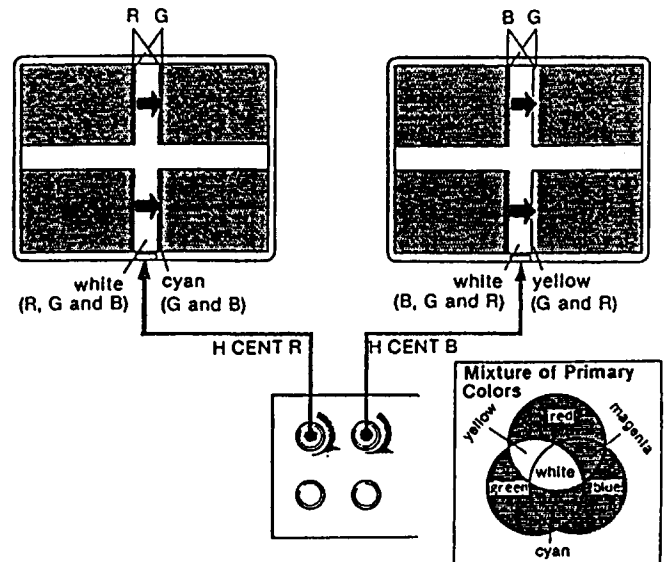
Adjustment

After transporting the set from one place to another, the red, green and blue lines may not be superimposed (the cross may not be seen as white).

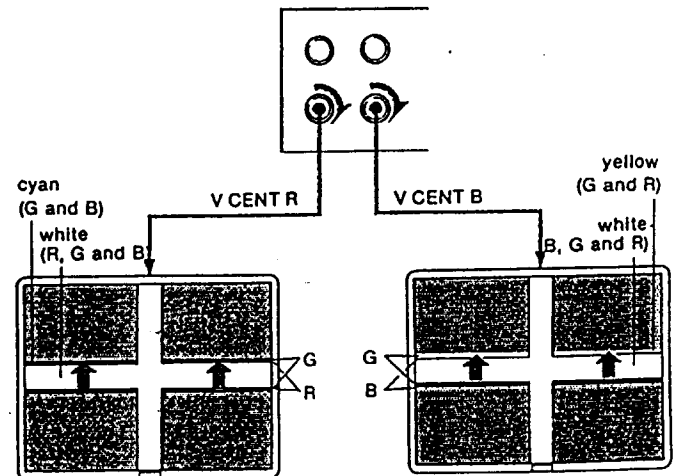
If this symptom is noticed, perform the registration adjustment yourself. Should the difficulty persist, contact your Sony dealer.

As you turn the controls clockwise, the lines move in the direction indicated in the illustrations. To move the lines in the opposite direction, turn the controls counterclockwise.

- ① Adjust the H CENT B and H CENT R Controls to converge the blue and red vertical lines with the green line.



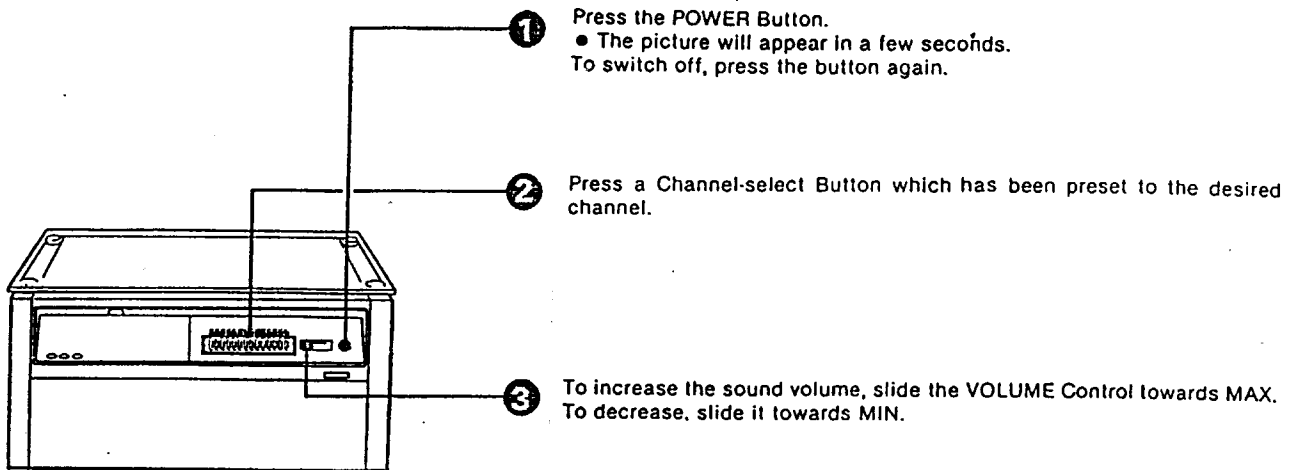
- ② Adjust the V CENT B and V CENT R Controls to converge the blue and red horizontal lines with the green line.



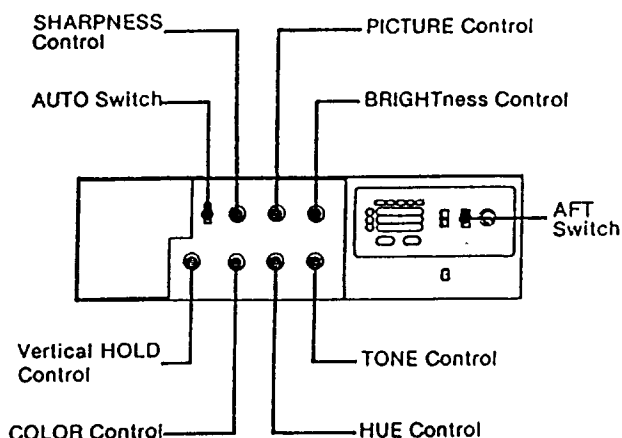
- ③ Repeat steps ① and ② until the cross appears white.
- ④ After the adjustment is completed, set the TEST/NORMAL Switch to NORMAL, replace the cover, and close the front panel.

OPERATION

Operate the controls in the numbered sequence for proper operation. To reset channels, see pages 10 – 13.



- The channel selected just before the POWER Button is set to OFF will be memorized and will appear when the set is turned on.
- If a tone or picture adjustment is required, open the front panel and proceed as follows.



Tone adjustment

Adjust the TONE Control to your preference. Turn clockwise for more treble, or counterclockwise for less treble.

Automatic picture adjustment

Set the AFT Switch to ON. The AFT (Automatic Fine Tuning) locks in the correct signal and secures a sharp picture. Set the AUTO Switch to ON. The AUTO color circuit locks onto preset levels of hue and color to provide correct reproduction.

Brightness and contrast adjustment

Correct brightness and contrast settings are important for good color reproduction.

Perform the initial adjustments as follows:

- ① Turn the PICTURE Control fully counterclockwise.
 - ② Adjust the BRIGHTNESS Control so that the darkest parts of the picture appear as black.
- A center detent position that provides a setting suitable for average use is incorporated in this control.
- ③ Turn the PICTURE Control from the lowest setting to the desired level according to your preference and room lighting conditions. The PICTURE Control will adjust the contrast, color intensity and brightness simultaneously in the proper ratio.

Manual color and hue adjustment

Both COLOR and HUE Controls have a limited adjustment range in the AUTO mode. If you wish to control color reproduction manually, set the AUTO Switch to OFF to disengage the automatic color mode.

Adjust the COLOR Control for the desired color intensity.



Picture becomes pale.



Picture becomes vivid.



Adjust the HUE Control for the most natural skin tones.



Skin tones become purplish.



Skin tones become greenish.



- COLOR and HUE adjustments have no effect upon black and white programs.

SHARPNESS Control

Turn the SHARPNESS Control clockwise for maximum sharpness. Turn the control counterclockwise for a softer picture. If reception conditions cause a snowy picture, more pleasing results will be obtained with a softer picture.

A center detent position that provides a setting suitable for average use is incorporated in this control.

Vertical hold control

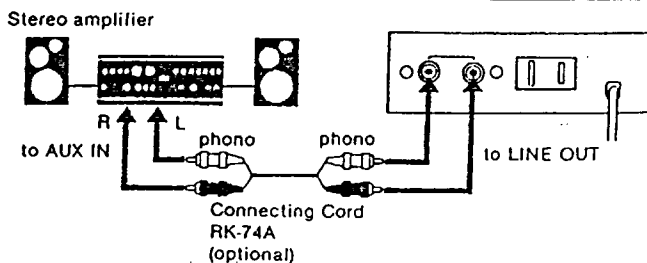
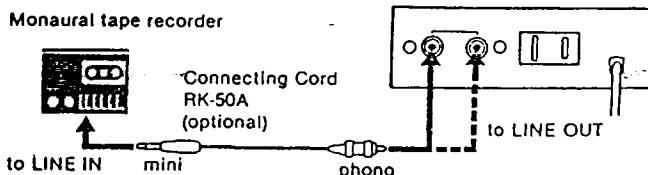
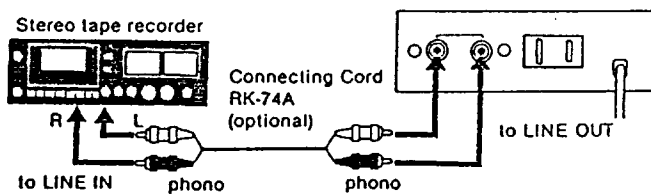
If the picture rolls vertically, adjust the V HOLD Control.

To record or amplify the TV sound

Use the Audio LINE OUT Jack(s) located on the rear.

The TV sound may be recorded or amplified by connecting a tape recorder or amplifier to the LINE OUT Jack(s) with a suitable connecting cord.

Each jack provides identical monaural sound, and both jacks may be used together. The VOLUME and TONE Controls setting on the projector does not affect the output level.

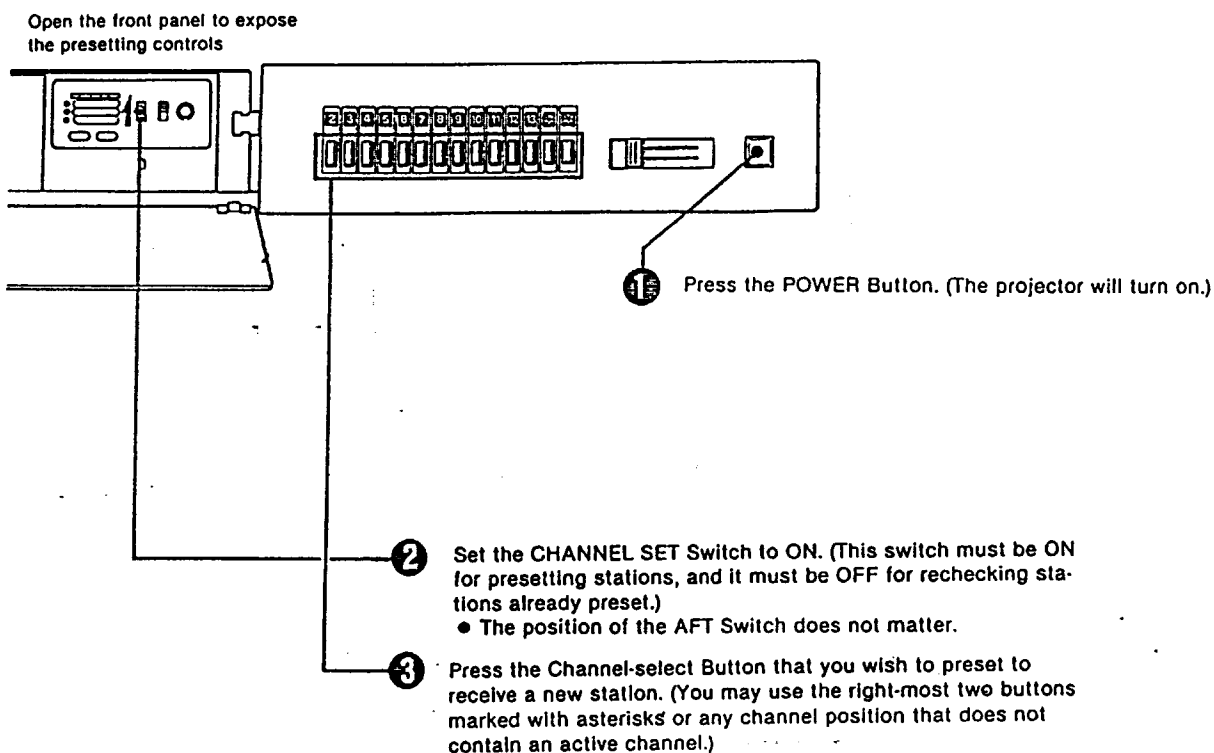


INTRODUCTION TO CHANNEL PRESETTING

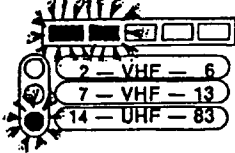
Each of the 14 channel positions of your projection TV set can be preset to receive any of the VHF channels 2 through 13 and UHF channels 14 through 83. You can preset your favorite channels in your desired sequence and channel position by following the steps on the next few pages. Those positions that are not used to receive local stations may be used to select other program sources such as a connected cable TV system, or video tape recorder.

Ⓐ TO PRESET DESIRED CHANNELS

From the local newspaper, or your neighbors, or a TV set, you can determine which VHF and UHF stations provide satisfactory reception in your locality.



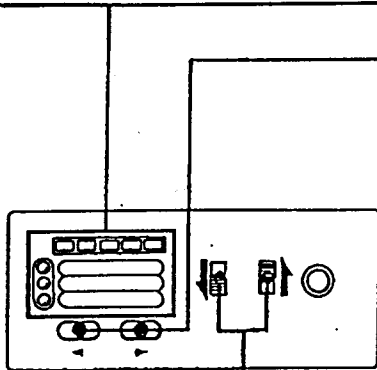
Ex. UHF Channel 41



Tuning Indicator and Band Indicator Lamps

The red lamp when lit shows you are in the Band including channels 2 through 6, the yellow lamp when lit shows you are in the band including channels 7 through 13, and the green lamp when lit shows you are in the band including channels 14 through 83. Within each of these bands,

the multi-segment Tuning Indicator will show in what portion of the band you are tuned to at any given moment, with the left-most segment indicating the lowest frequency within each band, and the right-most segment indicating the highest frequency within each band.



- 4 Press the TUNING-up ► or -down ◀ Button. (Do not hold the button in, just press it momentarily). Allow 1 or 2 seconds for the picture to stabilize.
 - In strong signal areas, tuning may sometimes stop between channels.
 - If a station is not received, press the TUNING-up ► or -down ◀ Button again.
- 5 Repeat step 4 as required until your desired station appears on the screen. Use the Tuning Indicator and Band Indicator Lamps (explained above) as guides.
- 6 Repeat steps 3, 4 and 5 for all the channel positions you wish to preset.
- 7 Set the CHANNEL SET Switch to OFF and make sure the AFT Switch is now set to ON.

After the presetting has been completed, replace the Channel Indicating Segments to correspond to your presetting (see page 13) and close the front panel.

- If there is a VTR position to be included, refer to page 13.
- To use your projection system with a cable-television system, contact a representative of the cable company for instructions regarding channel selection. In most cases, this adjustment will be made by the cable company at the time of installation.

⑧ TO ARRANGE THE ACTIVE VHF AND UHF CHANNELS IN NUMERICAL SEQUENCE OR YOUR DESIRED SEQUENCE

Any push button can be set to any frequency from below channel 2 to the highest UHF TV frequency.

① Make a list of your receivable VHF and UHF stations and list them as shown in the following example.

VHF: Channels 2, 4, 5, 7, 9, 11 and 13

UHF: Channels 21, 25, 31, 41 and 47

② Having made such a list, remove the Channel Indicator Sheet from the panel, and insert numbers to correspond to your list (instructions on changing numbers are on page 13). You are now ready to preset the Channel-select Button to correspond to your selection of stations.

Example



③ Press the POWER Button, (the projector will turn on).

④ Set the CHANNEL SET Switch to ON (This switch must be ON for presetting stations, and it must be OFF for rechecking stations already preset).

⑤ Press the Channel-select Button to be preset first. The station selected just before the CHANNEL SET Switch had been set to ON will appear on the screen (the channels may be preset in any order, however, it is more convenient to start with the lowest channel number and proceed to the highest channel number when channels are placed in ascending numerical order).

• In our example above, we would start by pressing the Channel-select Button marked 4, since channel 2 has already been preset at the factory.

⑥ Using the Tuning Indicator and Band Indicator Lamps (explained in section ④), press the TUNING-up ► Button for locating higher numbered channels or the TUNING-down ◀ Button for locating lower numbered channels. (Do not hold the button in, just press it momentarily).

Allow 1 or 2 seconds for the picture to stabilize.

⑦ Repeat step ⑥, as required until your desired station is received.

• In strong signal areas, tuning may sometimes stop between channels. If your desired station cannot be received, press the TUNING Button again.

⑧ Press the next Channel-select Button to be preset and press the TUNING-up ► or TUNING-down ◀ Button as required to locate the next station.

• In our example we would now press the next Channel-select Button to the right (marked 5) and press the TUNING-up ► Button to receive the next higher station.

⑨ Repeat step ⑧ until all desired stations have been preset.

⑩ Set the CHANNEL SET Switch to OFF and make sure that the AFT Switch is now set to ON.

Alternative Tuning Method

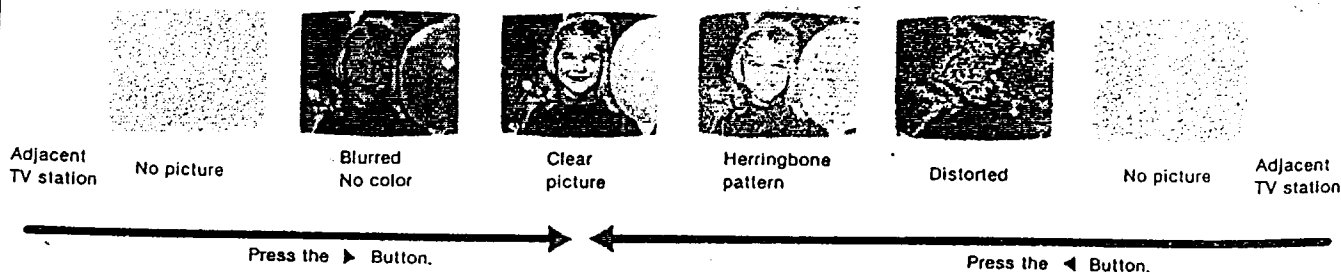
Before tuning in the desired station, you may use the CHANNEL CLEAR Button to erase any memory on the depressed Channel-select Button, and to position its tuning to a frequency below channel 2. Then use the TUNING-up ► Button as often as required to locate your desired station.

To fine-tune the channel manually

In case of extreme interference, or of an extremely weak station, adjust the fine tuning manually as follows.

Check that the CHANNEL SET Switch is set to OFF, set the AFT Switch to OFF and keep the TUNING-up ► or TUNING-down ◀ Button depressed until a clear picture is obtained. Refer to the following chart.





When the fine tuning is completed, close the front panel with AFT Switch set to off.








CHECKING THE SET BY YOURSELF

Many apparent malfunctions may be caused by slight misadjustments of the regular controls or some other equally simple cause. If any difficulty arises in the operation of your set, first check

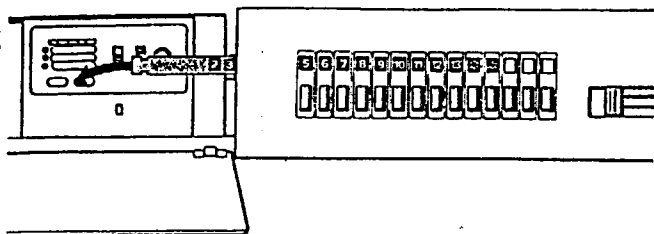
through this illustrated list of symptoms and corrections. Should the difficulty persist, unplug the set and contact your Sony dealer.

SYMPTOM	CORRECTION
 <p>no picture (screen not lit) no sound</p>	<ul style="list-style-type: none">● Plug the set into a working outlet.
 <p>no picture (screen not lit), but good sound</p>	<ul style="list-style-type: none">● Turn the BRIGHTness or PICTURE Control clockwise.
 <p>good picture but no sound</p>	<ul style="list-style-type: none">● Slide the VOLUME Control toward MAX.
 <p>no picture, no sound, but snow and noise only</p>	<ul style="list-style-type: none">● Connect the antenna properly.● Check the outdoor antenna.

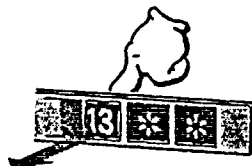
SYMPTOM	CORRECTION
 <p>no color</p>	<ul style="list-style-type: none">● Set the AUTO Switch to ON.● Set the AFT Switch to ON.● Turn the COLOR Control clockwise.
 <p>herringbone pattern, stripes, no color, no picture, too indistinct, etc.</p>	<ul style="list-style-type: none">● Set the AFT Switch to OFF and adjust the fine tuning with the TUNING-up ► or TUNING-down ◀ Button.
 <p>picture out of focus, blurred color</p>	<ul style="list-style-type: none">● Check the system set-up and registration referring to pages 6 - 7.
 <p>dotted lines or stripes</p>	<ul style="list-style-type: none">● Often caused by interference from autos, neon signs, hair dryers, electric razors, etc. Try adjusting the antenna for minimum interference.
 <p>double images or "ghosts"</p>	<ul style="list-style-type: none">● Readjust the indoor antenna. Reflections from nearby mountains or buildings often cause this problem. In such cases, a highly directional outdoor antenna may improve the picture.

To replace the number-indicating segment

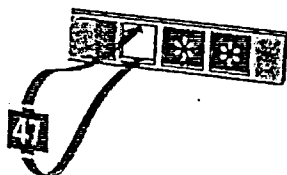
- ① Remove the Channel Indicator sheet.



- ② Press the segment out from the rear.



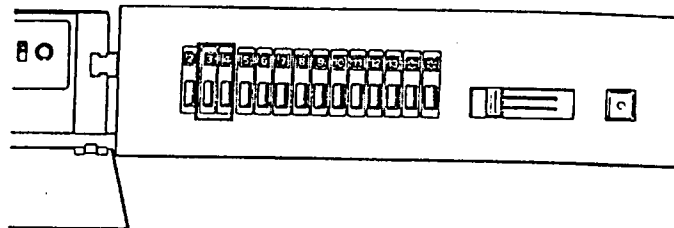
- ③ Install the correct number segment.



- ④ Replace the sheet in the original position.

To preset for VTR playback

At the factory, the second button from the left is preadjusted to VHF channel 3, and the third button to VHF channel 4. One of these channels, 3 or 4, is locally inactive and may be used to view the playback picture from a Sony Betamax videocassette recorder (or other VTR) equipped with an RF output terminal.



If you wish to preset some other position to receive the signals from the recorder, complete the connections and proceed as follows.

- ① Set the recorder to the playback mode.
The signal from the recorder will be fed to the projector.
- ② Set the CHANNEL SET Switch to ON.
- ③ Press the Channel-select Button to be preset for viewing the playback picture.
- ④ Press the CHANNEL CLEAR Button.
- ⑤ Press the TUNING-up ► Button until VHF channel 3 or 4 (the operating channel of the rf unit built into the recorder) is received, whereupon a clear picture will be obtained.
- ⑥ Set the CHANNEL SET Switch to OFF.

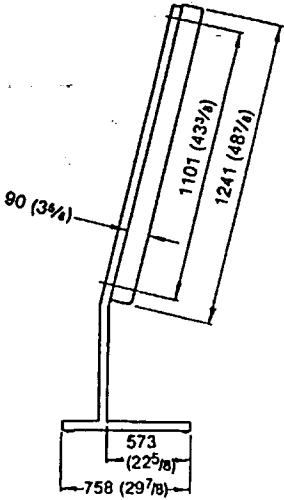
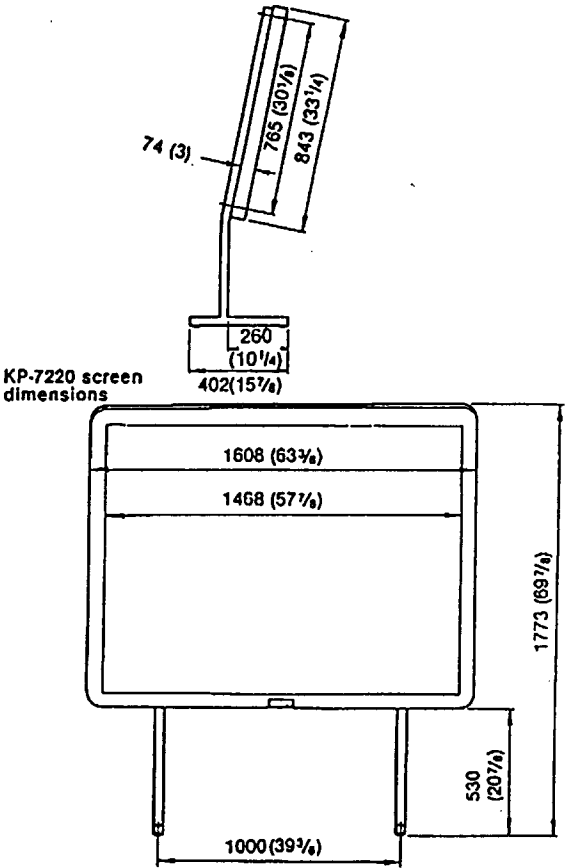
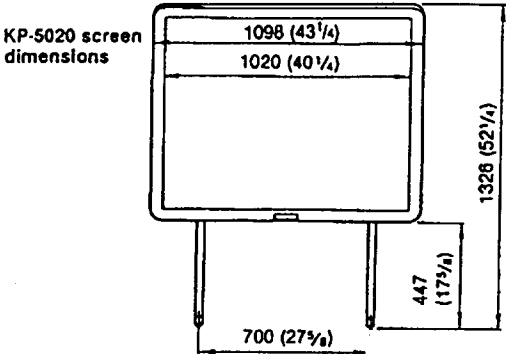
TECHNICAL SPECIFICATIONS

Projection system	3 picture tubes, 3 lenses horizontal in-line system
Picture tube	5.5-inch high-brightness monochrome tubes
Projection lens	F1.0/130mm plastic lenses
Screen material	Aluminum foil concave screen

	KP-5020	KP-7220
Projected picture size (measured diagonally)	50 inches	72 inches
Audience area Viewing distance	3.0 m (10 ft) mini- mum to 18.3 m (60 ft) maximum	3.6 m (12 ft) mini- mum to 24.4 m (80 ft) maximum
Optimum seating arrangement	Within approx. 45 degrees from center	
Throwing distance	Approx. 1.8 m (6 ft)	Approx. 2.5 m (8 ft)

Television system	American TV standards
Channel coverage	VHF channels 2-13 UHF channels 14-83 (a total of up to 14 preselected channels)
Antenna	75-ohm antenna terminal for VHF 300-ohm antenna terminals for UHF
Speaker	2 speakers, 10 cm (4 inches) dia.
Audio output	LINE OUT (2 phono jacks) -5 dB, approx. 10 kilohms
Power requirements	120V ac, 60 Hz
Power consumption	130W (max), 100W (average)
Dimensions Projector	Approx. 830 x 424 x 650 mm (w/h/d) 32 3/4 x 16 3/4 x 25 3/4 inches incl. projecting parts and controls
Weight	Screen See the figure.
	Projector Approx. 53 kg (116 lb 14 oz) incl. top board of 13 kg (28 lb 11 oz)
	Screen KP-5020: Approx. 8.9 kg (19 lb 10 oz) KP-7220: Approx. 17.2 kg (37 lb 13 oz) incl. screen supports
Accessories supplied	Channel number segments Antenna connector (300-75 ohm matching transformer is built-in)

Design and specifications subject to change without notice.



unit: mm (inches)